CENTRAL VIRGIN RIVER AREA

By H.K. Christiansen

The central Virgin River area is between the south end of the Pine Valley Mountains and the Hurricane Cliffs to the east and the White Hills to the southwest. Most of the wells measured are near the Virgin and Santa Clara Rivers.

Total estimated withdrawal of water from wells in the central Virgin River area in 1998 was about 20,000 acre-feet, which is 2,000 acre-feet more than was reported for 1997 and 3,000 acre-feet more than the average annual withdrawal for 1988-97 (tables 2 and 3). This withdrawal includes water from valley-fill aquifers used primarily for irrigation and water from consolidated rock and valley fill, which is used primarily for public supply. Withdrawal for irrigation in 1998 was about 800 acre-feet more than in 1997 and withdrawal for industry in 1998 was about the same as in 1997. Withdrawal for public supply was about 2,100 acre-feet more than the 1997 estimate.

The location of wells in which the water level was measured during February 1999 is shown in figure 32. The relation of the water level in selected wells to annual discharge of the Virgin River at Virgin, to cumulative departure from average annual precipitation at St. George, to annual withdrawal from wells, and to concentration of dissolved solids in water from well (C-41-17)17cba-1 is shown in figure 33. Long-term hydrographs for selected wells along the Santa Clara River and the Virgin River show that water levels measured in February have fluctuated with no general trend. The water-level fluctuations probably resulted from recharge from the Santa Clara and Virgin Rivers. The water level in well (C-43-15)25ddd-1, in the Fort Pierce Wash area, has declined the most, about 87 feet since 1961; and the water level in well (C-42-14)12dbb-1, 4 miles southeast of Harrisburg Junction, has declined more than 22 feet since 1991. These declines probably resulted from increased local withdrawal for irrigation.

Discharge of the Virgin River at Virgin in 1998 was about 193,400 acre-feet, which is 82,600 acre-feet more than the revised value of 110,800 acre-feet for 1997 and about 57,500 acre-feet more than the long-term average for 1931-70 and 1979-98. Precipitation at St. George in 1998 was 13.97 inches, which is 5.83 inches more than the average annual precipitation for 1947-98 and 3.26 inches more than in 1997. The concentration of dissolved solids in water from well (C-41-17)17cba-1 indicates little overall change since 1966.

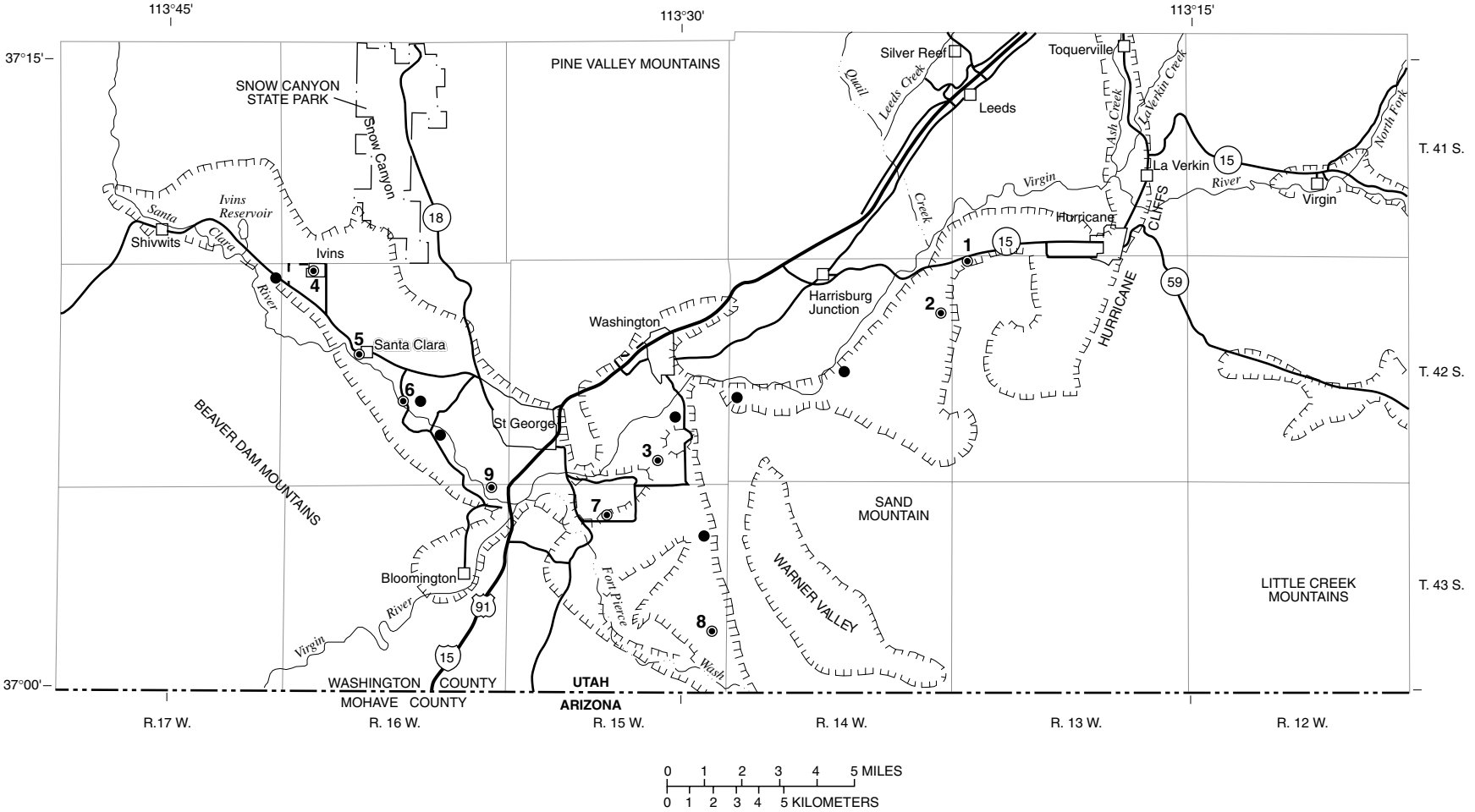

Figure 32. Location of wells in the central Virgin River area in which the water level was measured during February 1999.

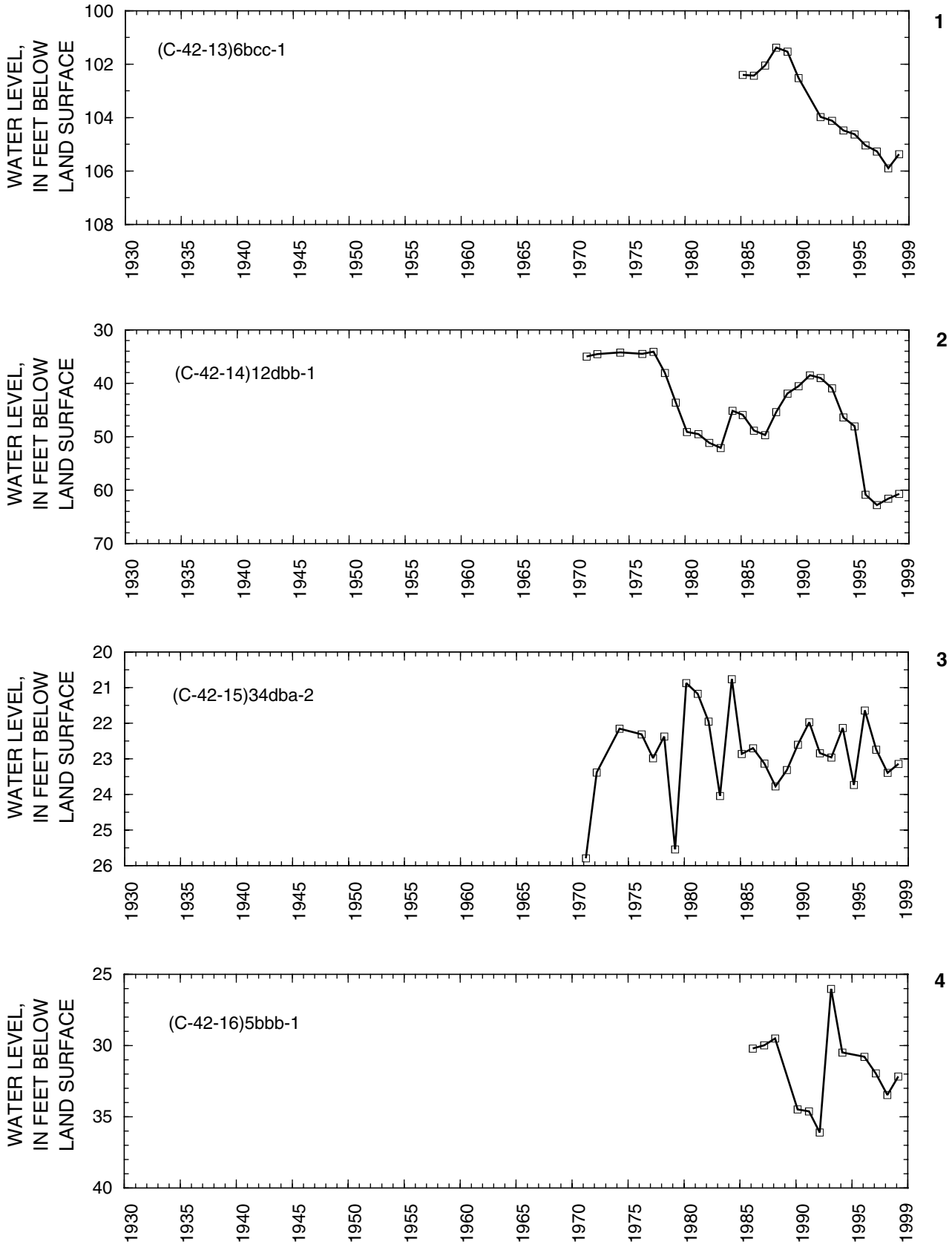

Figure 33. Relation of water level in selected wells in the central Virgin River area to annual discharge of the Virgin River at Virgin, to cumulative departure from average annual precipitation at St. George, to annual withdrawal from wells, and to concentration of dissolved solids in water from well (C-41-17)17cba-1.

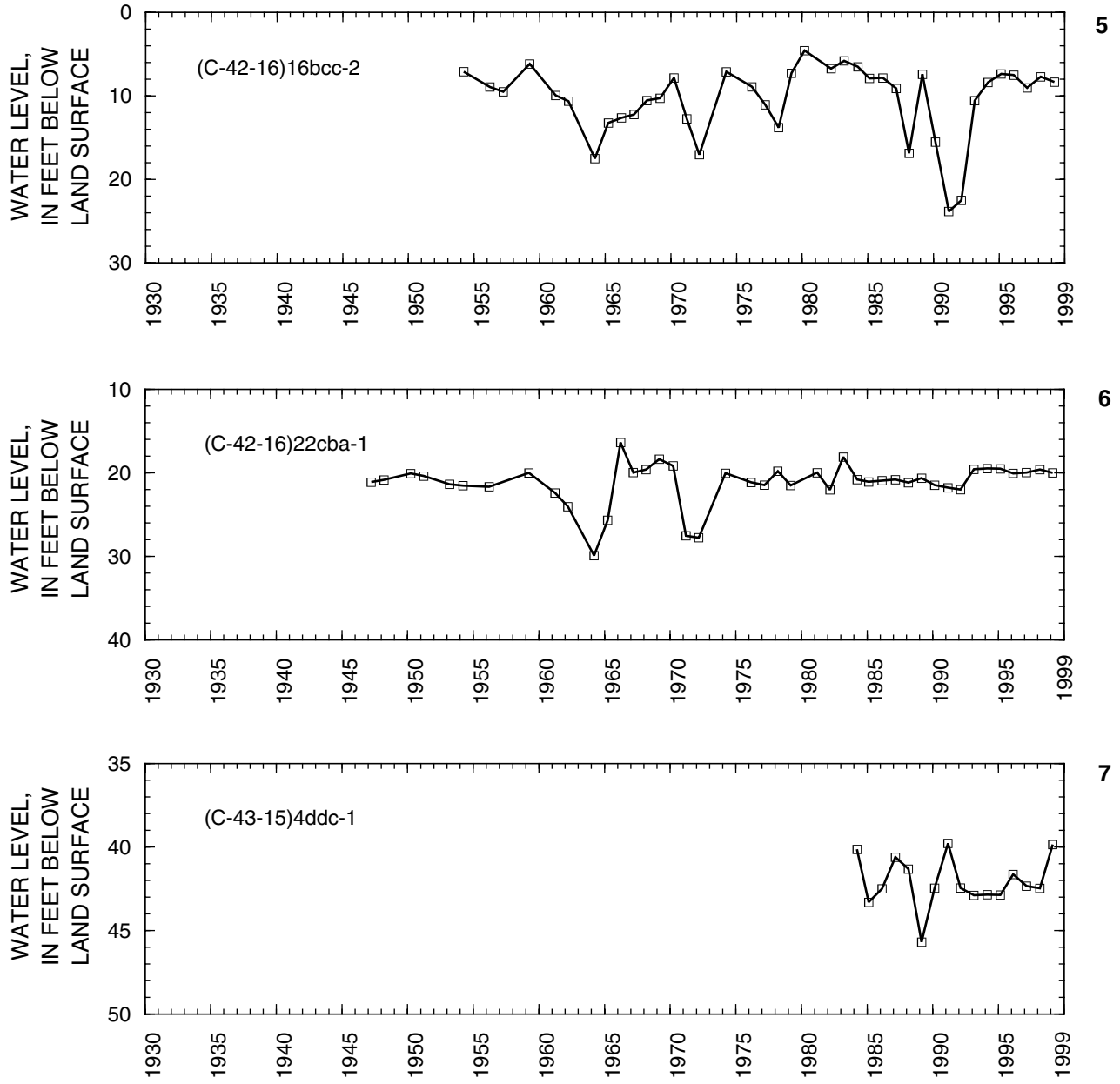

Figure 33. Relation of water level in selected wells in the central Virgin River area to annual discharge of the Virgin River at Virgin, to cumulative departure from average annual precipitation at St. George, to annual withdrawal from wells, and to concentration of dissolved solids in water from well (C-41-17)17cba-1—Continued.

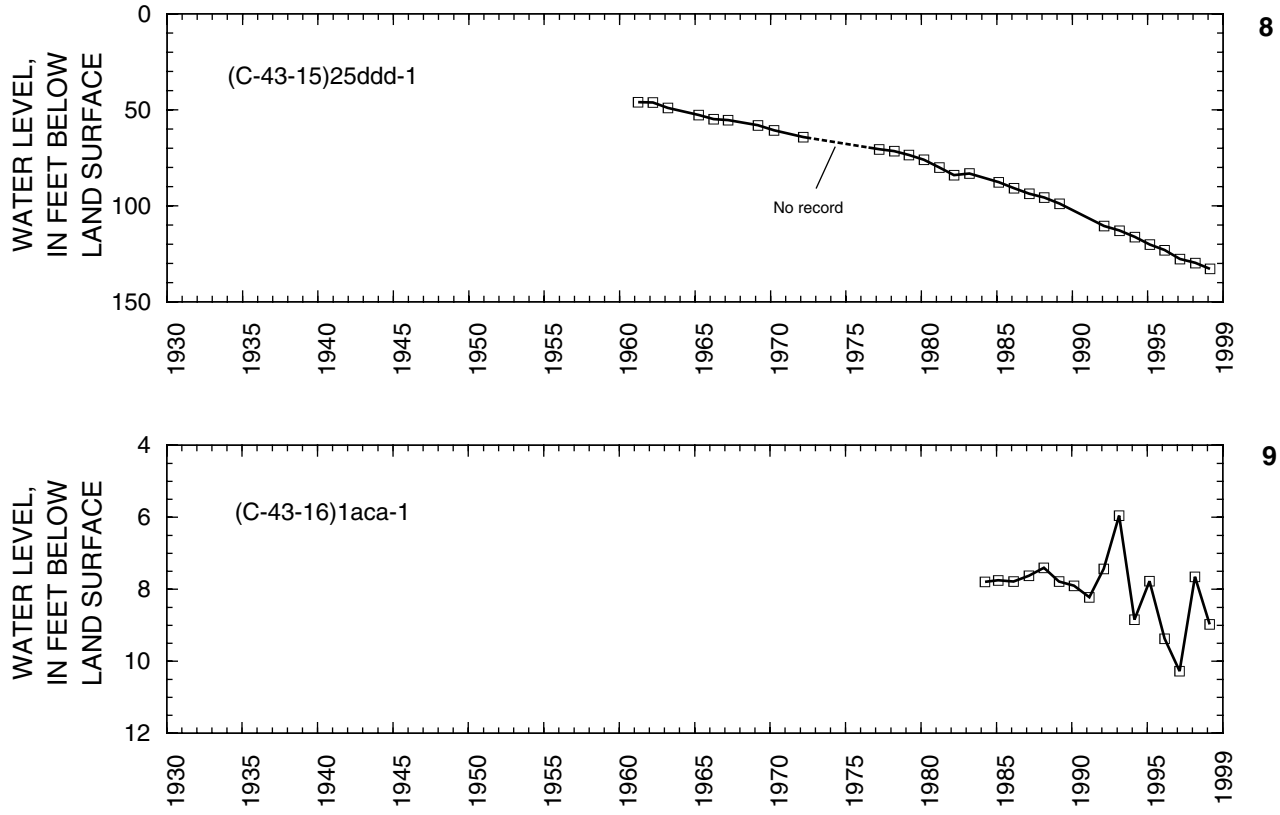

Figure 33. Relation of water level in selected wells in the central Virgin River area to annual discharge of the Virgin River at Virgin, to cumulative departure from average annual precipitation at St. George, to annual withdrawal from wells, and to concentration of dissolved solids in water from well (C-41-17)17cba-1—Continued.

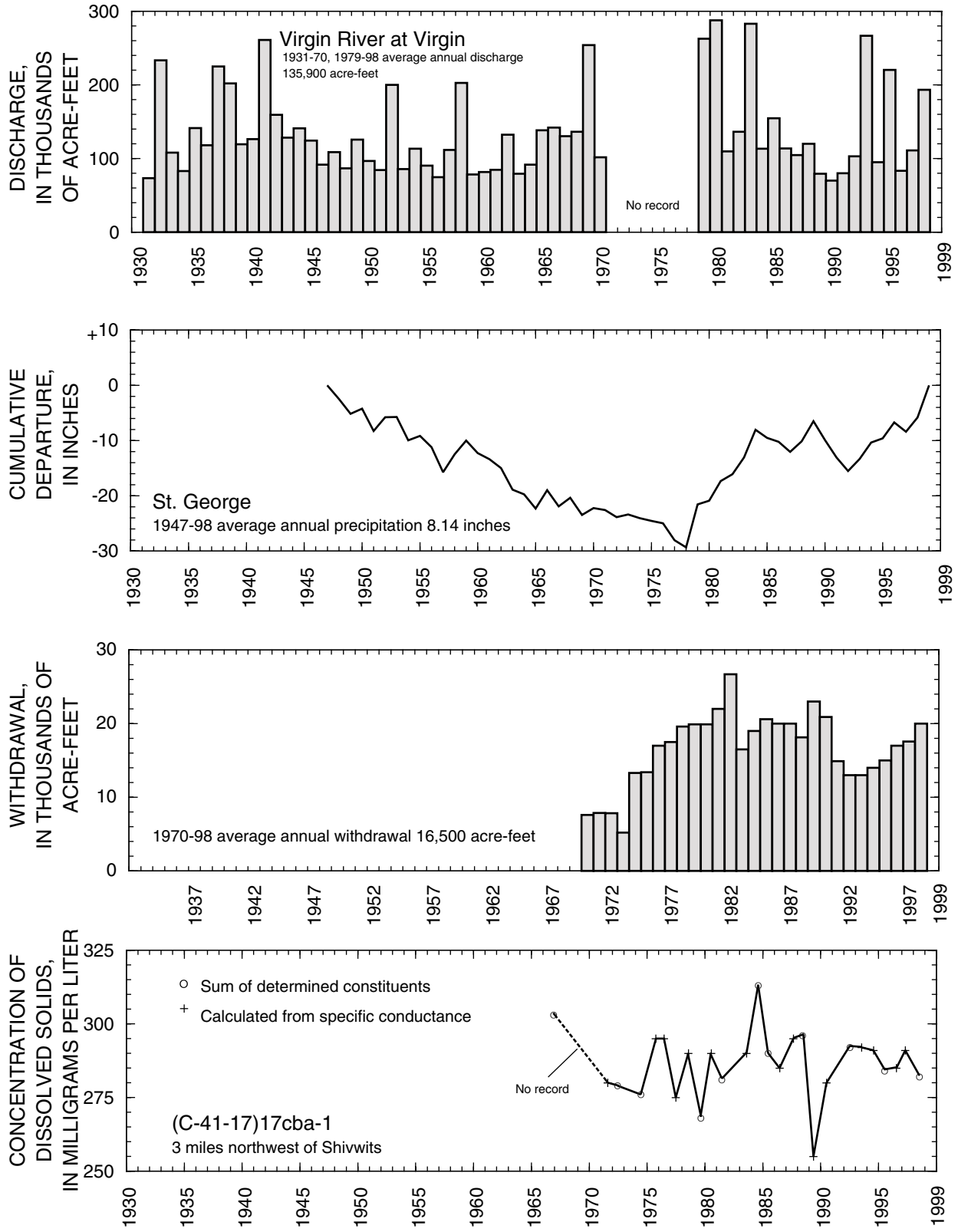

Figure 33. Relation of water level in selected wells in the central Virgin River area to annual discharge of the Virgin River at Virgin, to cumulative departure from average annual precipitation at St. George, to annual withdrawal from wells, and to concentration of dissolved solids in water from well (C-41-17)17cba-1—Continued.